

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Original) A gene targeting vector for introducing an exogenous gene into the ZO-1 gene region in a non-human animal, wherein the vector comprises the exogenous gene and an entire or partial region of the ZO-1 gene.
2. (Original) The vector of claim 1, comprising a structure in which the entire or partial region of the ZO-1 gene is placed upstream and/or downstream of the exogenous gene.
3. (Original) The vector of claim 2, wherein the partial region of the ZO-1 gene comprises exon II or a portion thereof.
4. (Original) The vector of claim 3, comprising a structure in which either one of the DNA fragments in (a) and (b) below is placed at each side of the exogenous gene:
 - (a) a 1.5 kb Bsp1286I-Bsp1286I fragment comprising a partial exon II of the ZO-1 gene and its upstream, and an 8.5 kb PstI-BamHI fragment located downstream of exon II;
 - (b) a 5.1 kb PstI-BsrDI fragment comprising a partial exon II of the ZO-1 gene and its upstream, and a 3.9 kb PstI-SphI fragment located downstream of exon II.
5. (Original) A gene targeting vector for introducing an exogenous gene into the ZO-2 gene region or the Disabled-2 gene region of a non-human animal, wherein the vector comprises the exogenous gene and an entire or partial region of the ZO-2 gene or the Disabled-2 gene.

6. (Original) The vector of claim 5, wherein the vector comprises a structure in which an entire or partial region of the ZO-2 gene or the Disabled-2 gene is placed upstream and/or downstream of the exogenous gene.

7. (Currently Amended) The vector of claim 1 or 5 ~~any one of claims 1 to 6~~, wherein the vector is used for generating a non-human animal expressing an exogenous gene or a non-human animal cell expressing an exogenous gene.

8. (Currently Amended) The vector of claim 1 or 5 ~~any one of claims 1 to 7~~, wherein the vector comprises in the upstream of an exogenous gene a promoter capable of transcribing the exogenous gene.

9. (Currently Amended) The vector of claim 1 or 5 ~~any one of claims 1 to 8~~, wherein the vector further comprises a marker gene expression cassette.

10. (Original) The vector of claim 9, wherein the vector comprises a structure in which an exogenous gene is placed adjacent to the downstream of a marker gene expression cassette.

11. (Currently Amended) The vector of claim 1 or 5 ~~any one of claims 1 to 6~~, wherein the exogenous gene is a marker gene expression cassette.

12. (Currently Amended) The vector of claim 9 ~~any one of claims 9 to 11~~, wherein the marker gene expression cassette is a drug resistance gene expression cassette.

13. (Original) The vector of claim 12, wherein the drug resistance gene expression cassette is a DNA fragment comprising β -geo.

14. (Currently Amended) The vector of claim 1 or 5 ~~any one of claims 1 to 13~~, wherein the non-human animal is a mouse.

15. (Original) A method for epithelial cell gene targeting, wherein the method comprises introducing a targeting vector into the cell by electroporation under the conditions of 0.4 to 0.5 kV voltage and 125 to 250 μ F condenser capacity.

16. (Original) The method of claim 15, wherein calcium concentration in a prepared cell solution used for electroporation is 5 μ M or less.

17. (Original) The method of claim 15 or 16, wherein the targeting vector targets the ZO-1 gene, the ZO-2 gene, or the Disabled-2 gene on cellular chromosome.

18. (Currently Amended) The method of claim 15 ~~or 16~~, wherein the targeting vector is the targeting vector of claims 1 or 5 ~~any one of claims 1 to 13~~.

19. (Currently Amended) The method of claim 15 ~~any one of claims 15 to 18~~, wherein the epithelial cell is derived from a higher animal cell.

20. (Original) The method of claim 19, wherein the higher animal is a mouse.

21. (Original) The method of claim 20, wherein the cell is the EpH4 mouse epithelial cell line.

22. (Currently Amended) A method for producing an epithelial cell line having an artificially altered chromosome, wherein the method comprises introducing a targeting vector into an epithelial cell line by the gene targeting method of claim 15 ~~any one of claims 15 to 21~~.

23. (New) The vector of claim 11, wherein the marker gene expression cassette is a drug resistance gene expression cassette.

24. (New) The vector of claim 23, wherein the drug resistance gene expression cassette is a DNA fragment comprising β -geo.